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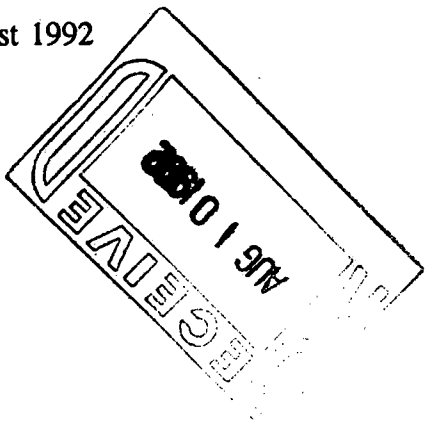
06 August 1992



Ms. Christina Purcell, Case Manager
New Jersey Department of Environmental
Protection and Energy
Division of Hazardous Waste Management
Bureau of Federal Case Management
CN 028
Trenton, New Jersey 08625-0025

RE: L.E. CARPENTER FEASIBILITY STUDY REPORT
RESPONSE TO COMMENTS DATED 26 APRIL AND 24 JUNE 1991

Dear Ms. Purcell:

This letter will outline the responses to comments from Mr. Edgar Kaup, Bureau of Federal Case Management New Jersey Department of Environmental Protection and Energy (NJDEPE) regarding the draft Feasibility Study for the L.E. Carpenter site. While all the comments in the letters dated 26 April 1991 and 24 June 1991 have been addressed in the Remedial Investigation and Feasibility Study Reports, this letter will serve as a summary of L.E. Carpenter's responses to the Department's comments.

Letter dated 26 April 1991

Item 1: The discussion of site specific hydrology has been refined in subsections 3.5.2 through 3.5.2.4 of the Final Supplemental Remedial Investigation (FSRI) Report (WESTON, 1992), and is summarized in Subsection 1.1.2 of the Final Feasibility Study (FFS) Report (WESTON, 1992). These reports discuss in detail the findings of extensive hydrogeologic investigations conducted at the site, as well as an in depth literature search of regional geologic and hydrogeologic data.

Item 2: Data collected since 26 April 1991, including data generated from additional monitoring wells installed on Air Products property, confirms WESTON's previous conclusions that shallow groundwater flow in that area is towards the drainage ditch, and further, that the Air Products ditch is indeed a groundwater divide. This is presented graphically in Figures 3-13, 3-14, and 3-15 of the FSRI and in Section 1.1.2 in the FFS.

Item 3: A review of available documents indicated that mines were located directly on-site and operational during the period from 1868 to 1881 (see Section 1.2 FFS). The information presented in the FSRI was based on a literature search for information regarding historical mining activities in northern New Jersey. The most comprehensive document regarding the iron mining in the vicinity of the Wharton, New Jersey area is Sims (Geology and Magnetite Deposits of Dover District, Morris County, New Jersey U.S.G.S. Professional Paper #287, 1958). This was

supplemented by information from Bayley (Iron Mines and Mining in New Jersey, New Jersey Geological Survey Final Report, 1910). Other sources which were examined were Sims (Geology of the Dover Magnetite District, Morris County, New Jersey, U.S.G.S. Survey Bulletin 982-G, 1953), Smith (Magnetite Ores of Northern New Jersey, Econ Geology, V28, 1933) and Colony (The Magnetite Iron Deposits of Southeastern New York, New York State Museum Bulls, 1923). Sims (1958) presents assays of magnetite ore mined in the vicinity of the L.E. Carpenter site. Due to the crude analytical methods available when the on-site mines were operational, weight percent analyses only were available. Sims (1958) did not report the presence of metals of potential concern at the site (namely lead and antimony), possibly due to the limitations of the analytical methods of the time.

Item 4: RCRA and land disposal restrictions are discussed in Section 2.3.1, as well as inclusion of numeric RCRA criteria for selected compounds in Table 2-6 (see FS).

Item 5: The specified treatment standards for ethylbenzene and xylene have been included in Table 2-6.

Item 6: Since 26 April 1992, NJDEPE has proposed soil cleanup standards specific for DEHP (N.J.A.C. 7:26D). Non-residential soil cleanup standards are proposed for the L.E. Carpenter site. This is reflected in both Section 2.2.3 and Table 2-6 of the FFS. The BEERA action level has been abandoned in favor of the proposed cleanup standard, which was calculated based on a combination of non-residential exposure pathways and a 10^{-6} increased lifetime cancer risk factor. Deed and well restrictions are proposed for the site as an integral part of each remedial alternative evaluated.

Item 7: This comment has been incorporated into the FFS in Section 2.3.1 and Table 2-6.

Items 8 and 9: WESTON's best professional judgement of areal extent of soils exceeding proposed action levels was utilized in estimating volume of soils potentially requiring treatment for costing purposes. However, as specified in Section 3.1 of the FS report, remedial actions will be driven by trends in contaminant concentrations in the soils.

Item 10: Deed and well restrictions which are likely to be implemented at the site are discussed in Section 4.3.2.3 of the FFS. This section delineates those restrictions which would be applicable specifically to groundwater.

Item 11: Incineration, both on-site and off-site, has been developed as a site specific remedial alternative. Please refer to Section 6.2.6 (Excavation/Thermal Treatment) of the FFS.

Item 12: It is WESTON's understanding that, due to RCRA standards for design and operation of hazardous waste landfills (see Section 4.2.10.1 in the FS), a landfill could not be sited at L.E. Carpenter. However, the requirement that treatment residuals from soil washing must comply with the land disposal restrictions of RCRA has been reflected in the FFS.

Letter dated 24 June 1991

Item 1: L.E. Carpenter, through IT Corporation, performed a treatability study of bioremediation and soil flushing on site soil samples. The draft study report, dated June 1992 indicates that site characteristics are acceptable for in situ biological treatment, that DEHP biodegradation/removal efficiency for groundwater samples under laboratory conditions was 99.7 percent, the corresponding removal efficiencies for xylenes and ethylbenzene were 99.9 percent each, that soil flushing with potable water was effective for the volatile compounds and soil flushing with a .5% Brij 30/35 flushing solution was effective in removing DEHP from site soils. The results of this study indicate the alternatives evaluated are specific for the L.E. Carpenter site.

Item 2: The conclusions of the Baseline Risk Assessment, approved by NJDEPE in February 1992, was incorporated in the FFS. Specifically, Sections 1.5 and 1.6 of the FS describe the findings of the RA and utilization of those findings in directing remedial actions for the L.E. Carpenter site.

Item 3: The potential ARARs attached to the 24 June letter were incorporated into Section 2 of the FFS.

Item 4: The holding time exceedance for VOC analysis has been reflected in the FSRI in Section 1.4 of the FFS. Potential effects from the site on the local macro-invertebrates in the Rockaway River will be further evaluated in the benthos study being conducted by WESTON. The findings of the benthos study will be presented to NJDEPE when completed, and the need for potential remediation of sediments will be evaluated at that time.

Item 5a: A Wetlands Assessment was conducted at L.E. Carpenter in August 1991 by EcolSciences, Inc. The Assessment Report was included as Appendix C in the FSRI. The wetlands were delineated and their functions analyzed within the EcolSciences report. Where remedial action alternatives affect wetlands, a discussion is presented in Section 6 of the FFS.

Item 5b: A floodplain delineation was performed utilizing a "Floodway and Flood Hazard Area" map for the Rockaway River (see Plate 1, FSRI). As depicted on the Plate,

the 100-year and 500-year floodplains are limited to those portions of the site located to the west of the railroad right-of-way, as well as a small strip of land on the extreme east of the property bordering a length of the Rockaway River, the Air Products drainage ditch, and Wharton Enterprises property. Additionally, the portion of Wharton Enterprises property investigated by L.E. Carpenter also lies in the 100-year and 500-year floodplain. As with the wetlands analysis of remedial alternatives, the affect to and on the floodplain was evaluated in the ARARs subsection for each Alternative which proposes remedial action in a flood prone area.

Item 5c: A letter dated 3 June 1991 from the United States Fish and Wildlife Service (which may be found as Appendix E of the Wetlands Assessment Report, Appendix C, FSRI) indicated that swamp pink (*Helonias bullata*) is documented to exist in forested wetlands within 10 miles of L.E. Carpenter. The Fish and Wildlife Service further indicated that with the exception of an occasional transient Bald Eagle (*Haliaeetus liucocephalus*) or Peregrine Falcon (*Falco peregrinus*), no other federally listed or proposed threatened or endangered flora or fauna are known to occur in the study. As such, EcolSciences, Inc. conducted a visual inspection during the Wetlands Assessment, and determined no evidence of swamp pink on-site or in the adjacent wetlands. These findings were included in the FSRI report, and by reference in the FFS report.

Item 5d: A Stage IA Archeological Survey of the L.E. Carpenter property was conducted by John Milner Associates in August 1991. The survey was conducted in accordance with the procedures outlined in the EPA Region II CERCLA/SARA Environmental Review Manual, and is included as Appendix B and summarized in Sections 2.2 and 3.2 of the FSRI, and is included in the FFS by reference.

Item 5e: Irrigation wells were identified in the investigation of off-site groundwater usage, conducted under the remedial investigation. The irrigation wells identified are utilized for lawn maintenance and a nursery (which is no longer operational). In light of these facts, the Farmland Protection Policy Act does not apply to any remedial action proposed for L.E. Carpenter. This line of reasoning has been included in Section 2.4 of the FFS report.

Item 5f: L.E. Carpenter did not include the Coastal Zone Management Act, the Coastal Barrier Resource Act and the Wild and Scenic Rivers Act in the ARARs identified for the site.

Specific Comments

Item 1: This sentence was revised so as to not emphasize any remedy evaluation criteria.

Item 2: A numerical value of hydraulic conductivity of site soils has been deleted from this section. Hydraulic conductivity units of gallons per square foot are used consistently through the FFS report.

Item 3: Please refer to the response to Item 3 of NJDEPE's letter dated 26 April 1991.

Item 4: The statement specified was deleted from the report.

Item 5: Conjectural remarks regarding the outcome of HRS ranking, if it were performed today, have been deleted. Section 2.7 of the FSRI report discusses and tabulates the number, location and current status of all groundwater wells located within one mile of L.E. Carpenter and Company.

Item 6: WESTON is not aware of any floating product to the west of Building 9 (near Ross Street). The extent of floating product has been fully characterized utilizing data gathered under the supplemental Remedial Investigation and is presented in Section 4.3.1 of the FSRI and included by reference in the FFS report.

Item 7: Two additional shallow monitoring wells have been installed on Air Products property allowing triangulation of water table elevations and establishing groundwater flow patterns in the area. A detailed discussion of the shallow groundwater flow patterns appears in the FSRI report in Sections 3.5.2.2 and 3.5.2.3, is summarized in Section 3.5.2.4, and presented graphically in Figures 3-13, 3-14 and 3-15 of the same report. They are also included by reference in the FFS report. Data collected from the wells located on Air Products property confirms WESTON's position that shallow groundwater flow on Air Products property is towards the drainage ditch. Surface water and sediment sampling results were briefly discussed in the section of the FFS titled "Findings of the Remedial Investigation," and discussed in depth in the FSRI.

Item 8: A discussion of the inorganic parameters which were detected at concentrations exceeding groundwater standards are presented in Section 1.6.6 of the FFS report.

Item 9: Groundwater flow direction from well MW-13 to the drainage ditch has been verified by triangulation of water level data collected from the three wells currently on Air Products property.

Item 10: A qualification stating that holding times were exceeded for VOC samples of surface water has been included in the FSRI and FFS report.

Item 11: These statements have been incorporated in the FFS Report.

Item 12: References to the former NJDEPE soil action level range of 1 to 5 ppm have been removed in favor of the proposed cleanup standards published in the New Jersey Register (24 NJR 373), published on 3 February 1992. Furthermore, based on the historical industrial use of the site; nonresidential surface soil standard of 2 ppm for PCBs was utilized to determine an estimated extent of soils requiring remediation based on PCB concentration.

Item 13: Additional river sediment sampling results were submitted to the Department on 27 June 1991. A final determination of potential impacts on the Rockaway River sediments is being withheld pending the completion of the benthos study being conducted by WESTON. The results of this study are expected to be available in the fall of 1992.

Item 14: The groundwater flow maps presented in the Revised Report of Remedial Investigation Findings (WESTON, 1990) did not take into account surface water elevations (i.e., Rockaway River, drainage ditch). Those measurements were initiated in November 1990 and they significantly modified the shallow zone groundwater contour maps. The revised contour maps are presented in the FSRI report (Figures 3-13, 3-14 and 3-15) and support the statement that the Rockaway River serves as a groundwater recharge boundary.

Item 15: As specified in the proposed cleanup standards (7:26D 1.6), "the Department's intention is that numeric and narrative cleanup standards presented in this chapter be considered as applicable or relevant and appropriate requirements (ARARs)...". Therefore, WESTON included these standards within the FFS report as requirements To Be Considered. To Be Considered status reflects the fact that this regulation is not yet law.

Item 16: All references to Bureau of Environmental Evaluation and Risk Assessment (BEERA) action levels have been deleted from the FFS.

Item 17: WESTON has reflected the Class IIA groundwater classification within Section 2.2.1 (Groundwater Standards) in the FFS. Federal Safe Drinking Water Act (SDWA) and New Jersey SDWA Maximum Contaminant Levels have been included in Table 2-1 as applicable requirements. Also included in Table 2-1 are the proposed New Jersey Cleanup Standards (24 NJR 373) for Class IIA groundwaters. Numerical criteria, where available, were presented for each chemical constituent identified as

contaminants of concern in groundwater (Table 2-8 of the Baseline Risk Assessment, WESTON, 1992). WESTON has proposed 600 series analytical methodologies to be utilized at the beginning of remedial action, with a shift to 500 series as remediation progresses toward cleanup goals. These methodologies have been proposed with the understanding that any groundwater being recharged to the aquifer would be contained within the capture zone, and treated, recharged water would get progressively "cleaner" as the remediation progressed. Analytical methodologies would switch to 500 series, which has a more stringent detection limit, as residual contaminant concentration decreased to below the upper limit of detection of those methods.

Item 19: For purposes of costing remedial alternatives, best professional judgement was used to estimate areal extent and volume of soils potentially requiring remediation. The fact that concentration trends for selected chemical specific cleanup goals will drive the actual extent and location of soils remediation is reflected in the FFS report.

Item 20: Statements which overstate the difficulties in dewatering excavations and compacting fill have been removed.

Item 21: The geologic cross sections presented in the FSRI (see Section 3.5.1.2, including Figures 3-4 through 3-10) reflect the abundance of cobbles and boulders encountered and logged during well installation activities conducted at the L.E. Carpenter site by WESTON. This is particularly relevant in Hydrogeological Cross Section C-C', which extends along the Rockaway River at the southeastern boundary of the property.

Item 22: L.E. Carpenter, through IT Corporation, has conducted treatability testing specific to bioremediation and soil flushing of contaminants from site soil samples. Preliminary results from this study indicate that the organic contaminants of concern are amendable to biodegradation by native microbia, and that the volatile organic species present in site soils are capable of being flushed with potable water. Further, the semi-volatile species of concern, namely DEHP, is capable of being flushed using a commonly available surfactant. In addition, the possibility of excavation and treatment of isolated hot spot soils based on their contaminant composition and concentration has been included in Alternatives 3 through 6.

Item 23: The provision of bottled water as a stop-gap measure pending completion of public supply water line hook ups has been included in the discussion of provision of alternate water supply.

Item 24: The potential uses of a slurry wall which is not tied into bedrock (i.e.: a "hanging wall") has been evaluated in Subsection 4.3.3.1 of the FFS. However, during

capture zone modeling (see Subsection 5.4.1) a hanging wall was judged not to provide significant additional containment to the modeled groundwater extraction system. For this reason, a hanging slurry wall was not included in any of the Remedial Alternatives that were evaluated for the L.E. Carpenter site.

Item 25: The geologic cross sections in the FSRI have been revised to more accurately reflect the subsurface geology at the L.E. Carpenter site. These cross-sections indicate that the surficial deposits over much of the site contain abundant cobbles and boulders. Materials of these sizes are common in glacial outwash deposits in the region and a particularly abundant in the areas of the site where sheet piling may be used for containment purposes. Large boulders (up to two feet in diameter) have been observed at the surface, particularly in the southern areas of L.E. Carpenter property and on the Wharton Enterprises property. Due to the large quantity of boulders and cobbles in the surficial deposits at the site, sheet piling could not be feasibly installed.

Item 26: The Enhanced Immiscible Product Recover System (EIPRS) was upgraded in 1991, through the installation of three 8-inch recovery wells. The upgraded system, which has been operational since 1991, has increased passive product recovery to approximately 400 gallons per month. Further, the potential for placement of additional wells to optimize product recovery has been reflected in the FFS.

Item 27: The soil conditions which would make excavation of trenches greater than eight feet in depth difficult have been included in the text. These conditions include the high water table angle of repose for the noncohesive fill material, and the close proximity to the Rockaway River.

Item 28: The capture zone modelling assumption which ignores the effect of groundwater flow from the intermediate zone results in an overestimation of each well's capture zone. This overestimation was judged to be slight and may be fully compensated for (or even over-compensated for) by the conservative underestimation of each well's capture zone resulting from the modelling assumption that the Rockaway River is a straight line recharge boundary 25 feet thick. Please refer to Table 5-1, Capture Zone Modelling Parameters and Assumptions, and the associated text in Section 5.4.1 of the FFS for further discussion of the capture zone modelling.

Item 29: The Well Head Protection Area (WHPA) computer model was used to determine a first approximation of the overall containment area that can be accomplished with existing and conceptually located interaction wells. The model's input data and simulation results have been incorporated into Subsection 5.4.1, as well as tabulated in Appendix A of the FFS Report. More sophisticated numerical modelling will likely be employed during Remedial Design.

Item 30: Hanging slurry walls, in combination with the modeled groundwater extraction scheme, were evaluated and determined not to provide significant additional containment benefit to the modeled extraction scheme. For this reason, slurry walls were not included in remedial alternatives which discussed groundwater collection.

Item 31: The deed restrictions included in Remedial Alternatives 2 through 6 apply to all portions of the L.E. Carpenter where contaminants exceed the proposed New Jersey Cleanup Standards for Contaminated Sites, Residential Surface Soil Standards.

Item 32: The FFS Report reflects the likelihood that a portion of treated groundwater will be discharged in accordance with the requirements of a New Jersey Pollutant Discharge Elimination System (NJPDES) Discharge to Surface Water (DSW) permit (please see the seventh bullet on page 6-21).

If you should have any questions or comments, please do not hesitate to call me or Laura Amend at (908) 225-3990.

Very truly yours,

ROY F. WESTON, INC.

Martin J. O'Neill, CHMM
Project Manager

cc: C. Anderson
R. Hahn

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